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August 21, 2006

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Mr. Richard Garcia
Region 13 Director
Texas Commission on Environmental Quality
14250 Judson Rd.
San Antonio, TX 78233-4480

Dear Mr. Garcia:

Re: Proposed Vulcan Construction Materials Quarry, Quihi, Medina County, Texas—
Proposed Water Pollution Abatement Plan (WPAP)
EAPP ID: 2502.00, Investigation # 462519, RN104921630

This letter transmits additional comments from the Medina County Environmental Action Association ("MCEAA"), in the form of two expert comments and this letter, and incorporates by reference all previous comments submitted by MCEAA and its members.

Enclosed are the comments submitted by our experts, Dr. Lynn Kitchen of Adams Environmental, Inc., and Erin Banks, P.E., of Banks & Associates. These expert comments were prepared on MCEAA's behalf and are adopted by MCEAA as such. We urge your agency's through consideration of their findings.

In closing, we note that it was stated by the agency in its letter from Mr. Bobby Caldwell, Region 13 Water Manager, dated August 11, 2006, that commenters will not receive a formal response to comments. In light of the enclosed expert comments and prior objections we have made regarding the WPAP, as revised, we would advise the agency, for its own sake, to ensure

that a thorough documentary record is prepared that will enable the Regional Director to make an informed decision. There are many relevant questions unanswered by the WPAP, as revised, and several documents referenced or cited in the WPAP as purported support for the WPAP's conclusions that are not included in the WPAP itself and which have not been disclosed or scrutinized. In other cases, the data, inputs, evidence, or analysis is simply missing entirely. If our clients were the applicants, we would likely not permit them to be so reliant on post-hoc justification and conclusory statements for a project of this magnitude.

Thank you for considering the need for further scrutiny of this environmentally significant project. We again request formal written notice of any decision on the WPAP by the Region 13 Director and the Executive Director and a formal written decision on MCEAA's contested case hearing request.

Respectfully submitted,

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Bobby Caldwell, Region 13 Water Section Manager

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August 21, 2006

Mr. Richard Garcia, Regional Director
Texas Commission on Environmental Quality
Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

RE: Comments on the WPAP for the Vulcan Materials Medina Quarry

Dear Mr. Garcia:

I sincerely appreciate the opportunity to provide comments on the Vulcan Materials Medina Quarry WPAP. I have been retained by MCEAA to review and comment on the submittal by Vulcan. Adams Environmental, Inc. is a local environmental firm here in San Antonio that has provided services to clients in Texas and the U.S. for over 10 years. We have a great deal of experience in the environmental issues in this area. Most of our business involves Section 404 Permitting, environmental assessments, environmental impact statements, natural resources management and planning, endangered species habitat studies, park planning, environmental site assessments and some experience with TRRP. I appreciate you taking time to review our comments and hope that you will seriously consider our suggestions for improvement of this plan.

GENERAL COMMENTS

Overall, the document appears to be somewhat inadequate, considering the size of the facility and the potential for contamination of the aquifer. I assisted with the development of a WPAP for a parking lot in San Antonio and much more detail and information was required for that 3.0 acre facility compared to this 1700 acre quarry. In fact, this submittal seems to be almost disrespectful of the regulations. Case in point is the discussion of the operation on the quarry which is cryptic at best. Nothing could be surmised concerning potential sources of surface water pollution from the information provided. As a citizen of San Antonio, I am very interested in protecting the aquifer, and I find it difficult to believe that Vulcan shares in that concern when the content of their WPAP is considered.

PROTECTION OF SENSITIVE FEATURES

The document does not provide sufficient details on the protection of sensitive features on the site. It does an adequate description of surface features, but does not address the potential for subsurface features. No studies were conducted to determine if any caves, solution cavities, or other karst features are found below the surface. These features could be easily compromised by blasting activities. Once blasting is completed, protection of undetected features may be difficult. A sinkhole approximately 40 feet

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deep is located just west of the site. This sinkhole connects to a cave, the size of which is currently unknown. These types of subsurface features are relatively common in the quarry area and could be significant problems for the quarry and especially for protection of the aquifer. Vulcan should conduct subsurface investigations to ensure that large caves and other features are not present.

SELF-SEALING SEDIMENTS

Pumping of very fine particles to mined portions of the quarry to create self-sealing, impermeable settling ponds has been proposed as a permanent best management practice for stormwater management. It is stated that the fine particles removed by washing of soils and left behind by blasting can be used to seal sedimentation basins and reuse ponds [*hereinafter* referred to jointly as "sedimentation basins"]. Water containing these materials will flow into sedimentation basins and these sediments will settle in the ponds, eventually forming an impermeable layer that can be used as a liner. I agree that, in principle, this could happen, but it takes a great deal of time in nature for it to occur. The WPAP does not address the timing issue of this process and cannot provide any well-established evidence that it actually would work. I also attempted to find support for this procedure, but could not find anything of substance.

Sedimentation basins on this site should be protected with an artificial liner to protect the aquifer. The stakes are too high on this site to use an unsubstantiated method of lining sedimentation basins and subjecting the aquifer to contamination with sediments and potential releases from fuel or lubricant spills from equipment. Clays and fine particles loose their cohesive properties and increase their permeability when impacted by hydrocarbon spills. This is not a place to test the integrity of an untested liner.

If the TCEQ allows this method of self-sealing, the quarry designers should be required to demonstrate both in a pilot study that this self-organizing, self-sealing practice of fine particles is actually effective in creating an impermeable boundary to prevent pollutants from entering the aquifer. This demonstration should also include a time-table to show how long the process will take before an impermeable seal is created. The demonstration should also provide alternative pollution best management practices to bridge the gap between implementation of this process and development of the impermeable layers. A thorough literature review should also be provided to support pilot study results.

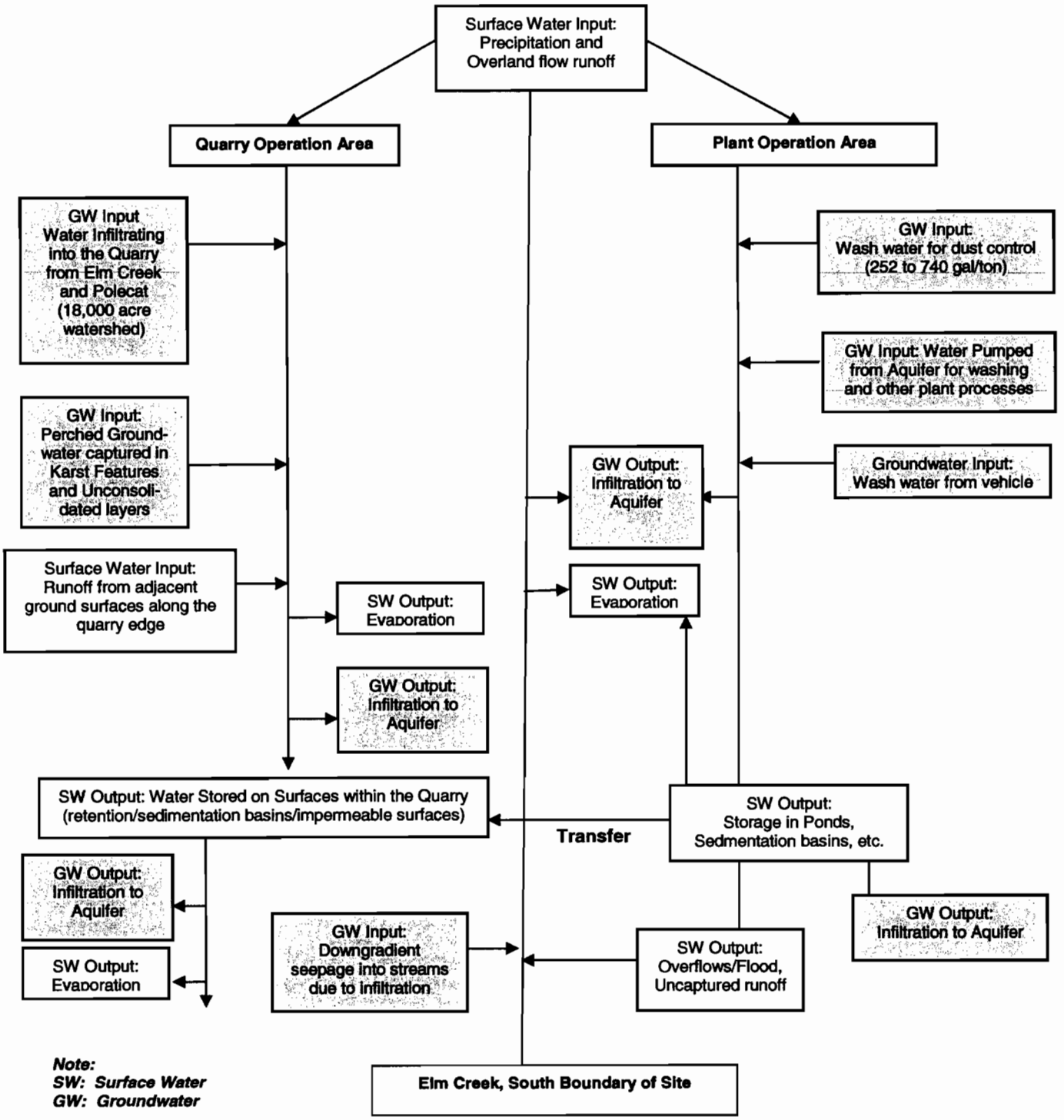
The WPAP indicates that only 37 acres of impermeable surfaces will be created by this project. The blasting process creates these fine particles that, according to Vulcan, are self-sealing. Those fine particles will fall all over the floor of the quarry and be compacted by equipment, causing the floor to be impermeable. If these particles are efficient as a retardant of potential pollutants into the aquifer in sedimentation basins, they would also act as a barrier of recharge water into formerly permeable portions of the recharge zone. If we accept the premise that those particles do indeed seal the ground surface, then the area of impermeable surfaces that are created by the project will be greater than 1000 acres. This is not addressed by the WPAP. Studies should be conducted to determine how this permanent loss of recharge water will affect surface and groundwater hydrology and the aquifer during the operation of the quarry and after the quarry has closed.

Finally, it is difficult to believe that even if the self-sealing process could take place within the required time frame, it would not be interrupted by the regular excavation of the sedimentation basins when they are reduced to 75% of original storage capacity (response to TCEQ Question 23B) or when the level of silt exceeds 6 inches (Permanent BMPs, original WPAP, TCEQ Form 0600 Attachment G.). It is not at all clear that the purported impermeability of the unlined sedimentation basins will be maintained while pursuing the WPAP's stated goal of sealing the quarry. Similarly, as noted above, if the assumption of impermeability in the sedimentation basins is justifiable, the assumption of impermeability when the fine particles are spread in the quarry requires further revisions to the hydrologic calculations.

WATER BUDGET

Another area that appears to be poorly addressed by the WPAP is the development of a water budget for the site. It is paramount that Vulcan collect information on the water balance for the site to determine if the quarry can operate and if recharge to the aquifer will be significantly impacted by the operation. The flow chart on the next page is a general schematic of the inflows and outflows of the quarry.

Water Budget Based on Stated WPAP Site Plan



Summary of Potential Hydrologic Inputs into the Quarry Excavation and Plant Operation:

1. Stream throughput (Polecat and Elm Creeks)
2. Perched groundwater tables (seepage into quarry from excavation walls)
3. Potential Karst Features
4. Precipitation
5. Pumped groundwater for use in quarry processes

Summary of Aquifer Loss Variables

1. Throughput of Polecat and Elm Creeks
2. Overflow from plant stormwater basins.
3. Fine particle packing to create impermeable settling ponds in mined out portions of the quarry. What is the volume of aquifer recharge water lost when small packing particles create impermeable surfaces? How will this affect aquifer recharge rates? When does the system become efficient (i.e. as a barrier to pollutants)?
4. Evaporation of process waters and stormwater retention waters.
5. Loss of hydrostatic pressure adjacent to stream corridors resulting from super-elevation of the streams in relation to their surroundings.

Surface Water Inputs

According to the WPAP, 18,301 acres (inclusive of the 1,776-acre quarry site) drain through the tributary system located up-gradient and on the quarry site. No information regarding base stream flow data for the on-site streams was provided. With no losses due to infiltration or other processes, a maximum of approximately 66,432,629 cubic ft. or 465 million gallons of water would be produced by a 1-in. storm event, potentially flowing through Elm Creek and Polecat Creek on the quarry site. This and other hydrologic calculations have not been disclosed in the WPAP. The final disposition of the water in the aquifer and flowing through the site should be calculated to determine overall impacts to the aquifer. Detailed stream analysis studies, which include hydraulic model estimates of channel conveyance during the 10, 25, 50 and 100-year storm events have been developed for Elm Creek, but these studies apparently focus only on the surface flow. In any case, the stream flood analyses were not disclosed with the WPAP..Because the quarry will be excavated to the edge of the 100-year floodplain of the streams, the infiltration rate of water in the stream would be increased (uninhibited flow through unconsolidated layers and karst features directly into the quarry). Depending on the findings, this accumulation of water in the quarry could flood the quarry, causing damage to equipment and imperiling the aquifer with potential releases of hydrocarbons from flooded equipment. This water could also eventually re-enter streams downgradient. Overall, the surface water-infiltration relationship has not been adequately addressed in the WPAP.

Additionally, water will also flow into the quarry from the edges of the quarry following rainfall events. Precipitation will also enter the quarry directly. The WPAP does not appear to address contributions from sedimentation basins in the quarry.

Groundwater Inputs

No environmental or geotechnical borings have been advanced on the project site to identify and delineate potential sources of perched groundwater. Perched groundwater consists of confined subsurface water deposits that are located above the normal aquifer elevations. These groundwater sources are generally confined by an impermeable layer that prevents downward percolation and recharge to the aquifer. When quarried, the lateral confining layers may be breached, and the perched water table may drain into the excavated area. This may mobilize pollutants, and contribute to overflow of the quarry's containment capacity. Local wells, especially those used for watering stock, may be suing these groundwater sources and could be drained by construction of the quarry. Many shallow wells and springs are located south of the quarry. These wells are often no more than 40 ft. deep and may be susceptible to quarry activities. Periodic borings along a grid of the project area should be advanced to search for and delineate potential perched groundwater features.

No surface or subsurface evaluations to screen for potential karst features have been conducted. Subgrade karst features are essential to transportation of groundwater to the aquifer. Without proper karst surveys, excavation and quarrying activities may disrupt groundwater flow and recharge into the aquifer. Additionally, karst features provide habitat for numerous threatened and endangered species, and disruption of these environments may adversely impact these species. At a minimum, periodic borings along a grid of the project area should be advanced to search for and delineate potential karst features.

According to water use records for the Vulcan quarries in San Antonio and Helotes, an estimated 252 to 740 gallons of Edwards or other aquifer water will be used to wash each ton of quarried material. If we consider the predicted production of the quarry (4-8 million tons per year), this means that the quarry will use between about 3,000 to over 20,000 acre feet of water use each year. Although the use of water in the washing of quarried materials is described in the WPAP as a "recycling process," water will inevitably be lost to inefficient process operations and evaporation. However, no quantification of the volume of water lost through inefficiencies in the system and evaporation has been conducted. Another 12 to 44 gal/ton of water will be used for dust suppression. Efforts should be made to quantify how much replacement water will be pumped from the aquifer over the operational lifetime of the quarry, as this water volume will constitute a drain on aquifer resources, and may affect stormwater and infiltration calculations in the WPAP.

Outputs from the Plant and Quarry Process

Most of the water flowing through the streams will bypass the quarry area and flow down gradient towards Quihi. The volume would be less water that infiltrates into the streambed. Also, some loss of surface water will occur via infiltration up gradient of the quarry and will flow into the periphery of the quarry via shallow groundwater in unconsolidated layers and karst features along the edge of the quarry. Stormwater overflow from detention ponds and sedimentation ponds will also leave the site.

Pumping of very fine particles to mined portions of the quarry and plant area to create self-sealing, impermeable settling ponds has been proposed as a permanent best management practice. The use of fine particles to develop an impermeable seal in mined portions of the quarry, if efficient as a retardant of potential pollutants into the aquifer, would also act as a barrier of recharge water into formerly permeable portions of the recharge zone. Studies should be conducted to determine how this permanent loss of recharge water will affect movement of area hydrology into the aquifer. Even more important, the presence of these materials on the surface of the quarry floor could render the floor permanently impermeable and this impermeable surface should be added to the 37 acres of impermeable areas already in the WPAP.

Water that would normally assist in recharging aquifer resources will be collected on impermeable areas of the quarry and in stormwater retention ponds. Additionally, groundwater used to process quarried materials will undergo some losses through evaporation – which may be considerable over the anticipated 40-year operational lifetime of the quarry. Quantitative studies should be conducted to estimate the amount of potential recharge water that will be lost to evaporation over the operation lifetime of the quarry.

The overall water balance should be prepared by Vulcan to illustrate how much water will enter and leave the site and how much water will no longer recharge or will be drawn from the aquifer. The current water balance sheets have only been prepared for the plant operation and not the quarry. Moreover, they address rainfall inputs at the plant site only, and do not address process outputs or upgradient runoff. The argument is made that the quarry is a closed system with no surface water outputs. However, the system is not closed if the floor or sides of the quarry are indeed permeable, which is highly likely and underscored by the abundance of sensitive features on the site.

SURFACE WATERS

The WPAP indicates that jurisdictional waters will be avoided by quarrying around the 100-year floodplains. However, no effort has been made to delineate ephemeral stream and other jurisdictional waters on the site. Observation of the USGS topographic map indicates that there are several potential jurisdictional ephemeral streams that will be destroyed by the excavation of the quarry. Mining operations would be considered fill operations in that blasting causes fill material to enter stream bed areas. Admittedly, the streams will be completely destroyed, but because of the method used for mining, the activity would still be considered to place fill in the streambed (which may now be at the bottom of the quarry!). Such actions require coordination with the U.S. Army Corps of Engineers. A detailed surface water delineation should be conducted to determine if the construction of the quarry or rail line will impact unnamed tributaries of Elm Creek and Polecat Creek.

Hydrostatic pressure, the balancing of water mass between the channel boundaries and adjacent ground water resources, will be greatly disturbed if the areas immediately adjacent to the stream beds are excavated and the stream super-elevated in relation to its surroundings. Base stream flow occurs not from precipitation run-off, but from groundwater infiltration into the stream because the bed of the stream is located below the ambient groundwater table. Even in ephemeral streams (which flow only for a short time

following precipitation events), the area groundwater table may be very shallow and located only a few feet below the stream bed. Plans for mining the quarry do not call for impacts to jurisdictional waters of the U.S. However, super-elevating the stream channels by mining the areas adjacent to on-site streams and lowering the base level of any local perched or shallow groundwater resources may effectively drain the stream by removing the hydrostatic pressure forces that maintain baseflow conditions (even in intermittent stream courses). This would effectively destroy the stream system by draining it of its groundwater hydrology. Thus, although Elm Creek and Polecat Creek would not be physically impacted, the functional values and flow characteristics of the streams would be significantly changed.

SPECIFIC COMMENTS FOR THE WPAP

1. More details should be provided concerning the method by which sensitive features will be protected. Equipment used for quarrying is large and many of these features are very small. It is difficult to understand how the surface of the quarry will be sloped away from the sensitive features when large equipment and blasting is used for mining operations.
2. The WPAP is not consistent in defining the depth of the aquifer under the quarry. Page 1, Attachment A indicates that the aquifer is over 300 ft. below the surface. Other parts of the WPAP list the top of the aquifer as 120 ft., 122 ft., and other various depths. I agree that the aquifer depth should be determined as an elevation, but these vary between 670 ft. MSL and over 900 ft. MSL according to the WPAP. A more definitive determination of the aquifer level should be determined using on-site monitoring wells across the quarry area.
3. Mining equipment contains hydraulic and fuel reservoirs that are relatively large. Releases from these reservoirs can be significant. Is there any documentation in the WPAP that provides information as to methods for containment in case releases occur. A list of tank capacities was provided with the MSD sheets. Loaders have 425 gallon fuel tanks and 86 gallon hydraulic tanks. Apparently smaller loaders are used and contain 297 gallon fuel tanks and 46 gallon hydraulic tanks. Hauling trucks have 300 gallon fuel tanks with 12 gallon hydraulic tanks. Locomotives apparently have the largest tank capacities with 1440 gallon fuel tanks and 202 gallon hydraulic tanks. Overall, on the site, fuel tanks total 7110 gallons and hydraulic tanks total 903.6 gallons. Releases from loaders, haul trucks, and locomotives could be significant. In fact, a release from the fuel tank of a locomotive would be similar to that of any AST requiring a SPCC plan.
4. The WPAP mentions very fine sediments that self seal. Are the areas where these materials are placed included in the calculation for impervious surfaces?
5. Are volumes of hazardous materials provided? A list of the volumes of hazardous materials stored on site should be provided. This does not seem to be present on the application. The only mention is that they will be small volumes. Also, there appears to be no mention of explosives for blasting. Where will these materials be stored?
6. MSD sheets include a great deal of materials used for degreasing and cleaning parts. It was my understanding that vehicle maintenance areas are located off of the recharge zone. However, it appears that materials used for vehicle maintenance are

being listed for the plant and quarry areas. What will these materials be used for? Will they be used for railroad maintenance?

7. Attachment B indicates that stormwater runoff from the quarry will be contained. If this is the case, what is the final disposition of the contained water. Does it evaporate or does it infiltrate into the aquifer? What storm events can the quarry accommodate?
8. Exhibit 2.1 indicates that finished grading contours and the quarry pit bottoms cannot be shown because the exact depth of rock reserves is not known. However, other portions of the WPAP indicate that excavation will not exceed 130 ft. from the ground surface or 25 ft. above the potentiometric surface. The exhibit would lead one to believe that the depth of excavation is not really known at this time.
9. The geologic assessment appears to have covered surface geology quite well. However, for a project that involves deep excavation, it seems appropriate that borrowings be drilled to determine the presence of karst features below the surface as well as the location of the aquifer. Caves and other sensitive features could definitely be located below the surface of the ground. This is further evidence by the presence of caves and sinkholes in the vicinity of the quarry.
10. Page 8 of the geologic assessment indicates that fault zones serve as conduits to flow with in the Edwards aquifer. Again, the extent of these faults and their role in surface recharge following quarry excavation is not addressed. Also, infiltration of water from Polecat and Elm creek into faults and the impact of excavation on the flow of water within those faults is not addressed. An important question would be, "What percentage of the storm flow in these creeks will eventually infiltrate and flow into the quarry area due to excavation across fault lines."
11. TCEQ 0602 Attachment A: This response action is appropriate for areas lying over impermeable services. However, it fails to address the fact that any spill occurring on the quarry is subject to infiltration into the Edwards aquifer with only 25 ft. of protection. The irnpacts of a spill of any fuels, lubricants, other hazardous materials is extremely high due to the fact that the materials can infiltrate into the aquifer and contaminate drinking water used by a major metropolitan area. This should be addressed in a detailed spill response plan with proper preventative measures provided. Although the chances of it happening are remote, the release of fuel from the 1440 gallon tank of a locomotive could be devastating to the quality of water in the aquifer.
12. TCEQ-0602 Attachment B: In this attachment as well as many other parts of the document, explosive materials are not listed as potential contaminants. Additionally, the method of handling explosives in an area over the aquifer is not addressed. One would assume that borings will be drilled into the limestone and those borings filled with some type of explosive. What measures will be made to ensure that explosive material does not drain into faults, solution cavities, and other karst features that could be direct conduits into the aquifer.
13. TCEQ-0602 Attachment B: This attachment indicates that hazardous materials in the plant area will be stored in a small shed with an impervious floor. No mention of containment is provided. Also, the quantity of these materials is not provided in the plan. The materials should be stored on shelves with raised edges and in a store room with curbed floors to contain the spill. The height of the curb should be determined by the volume of material potentially released.

14. TCEQ-0602 Attachment B: The actual operation and maintenance of the concrete truck washout is not described anywhere in this document. What is the final disposition of materials washed from the trucks? Are soaps and detergents used for washing? Are oils and lubricants removed from the trucks separated from aqueous solutions?
15. TCEQ-0602 Attachment C: Are the bulleted items listed in the plant area in order of occurrence? If so, shouldn't the water quality basins be constructed before rough grading and clearing and stripping is conducted? Or at least temporary sedimentation basins strategically placed to catch flow along major drainage areas?
16. TCEQ-0602 Attachment C: How will sensitive features be protected from construction? Will the features be enclosed with silt fences? How will grading around the features be accomplished?
17. TCEQ-0602 Attachment I: A sample inspection report is provided in this attachment. The sample inspection report lists several pollution prevention measures that are to be inspected, but no method of measurement or evaluation is provided. For example, how will site clearing be evaluated by an inspector?
18. TCEQ-0602 Attachment J: Buffer zones are described as "undisturbed" in this section. Will ample space be provided for quarry equipment to travel along the edge of the quarry? If roads are placed along the edge of the quarry, are they included as part of the buffer area? If so, will these roads be restored to native vegetation once the quarry is closed?
19. TCEQ-0602 Attachment J: It is a nice touch that the landscaping along the front of the operations entrance will be highly enhanced, however, this represents only a minor portion of the entire periphery of the quarry area and enhancement of that boundary would also be desirable from a water quality perspective. Given that vegetative matter from the plant site will be placed on berms around the quarry boundary, has the effect of the piling of vegetation on runoff been fully addressed?
20. Permanent Stormwater Controls (Sheet 5 of 9): Note 6 indicates that if sediment escapes the construction site, off-site accumulations of sediment must be removed. No method to accomplish this task is provided in the document. The Vulcan quarry on Loop 1604 in San Antonio consistently produces excessive quantities of dust along the access road. This dust is accumulating on trees and vegetation as well as covering the road and the shoulders of the road. During rains, the sediment and dust is absorbed by stormwater and flows into a nearby creek. Apparently, no controls of dust originating from the transport of crushed rock in trucks are provided. Methods of cleaning crushed rock indicate that 93% of sediments and dust will be removed. This seems like a small amount except when the production of 8,000,000 tons of limestone per year is considered. This means that trainloads of crushed rock could produce significant quantities of dust, depositing them along the track as the train travels south from the plant area. At the very least, the train cars containing crushed rock should be covered to prevent blowing of fine particles. These materials could eventually find their way into surface waters along the tracks, especially where the train passes over Elm Creek near the exit from the plant area.
21. Permanent Stormwater Controls (Sheet 5 of 9)--Note 7: This note discusses the removal of sediments from sediment traps or sedimentation ponds. The method of removal is not discussed and should be discussed in detail, especially considering the fact that the liner in the sedimentation ponds is comprised of self-sealed sedi-

ments. Proper removal of sediments is extremely important to not compromise the integrity of the liner potentially causing leakage of material into the Edwards aquifer.

22. Permanent Stormwater Controls (Sheet 5 of 9)--Note 10: Stabilization following temporary or permanent cessation of construction should be discussed in greater detail. On this site, drought should not preclude the initiation of stabilization. The site will have ample sources of water for irrigation, including water trucks used for dust suppression. There is no discussion of the type of vegetation to be used for restoration of constructed areas. I strongly recommend that native plant species be used. A mixture of species such as little bluestem, buffalograss, curly mesquite, Indiangrass, silver bluestem, and sideoats grama would be a good choice for this area.
23. Permanent Stormwater Controls (Sheet 5 of 9)—General: This entire section is basically a list of the guidelines provided by the TCEQ. The section should be revised to provide detailed information applicable to this site.
24. Permanent Stormwater Controls (Sheet 5 of 9): The plan indicates that a berm will be placed along the south side of the Polecat creek to protect against flooding. However, contours for this berm are not shown. Contours on the northern portion of the site show an elevation of 960 MSL. At this portion of the site, this elevation would be located below the elevation of the 100-year flood plain. As drawn, this would indicate that flood waters could potentially encroach on the plant site. More details should be provided to indicate the height and composition of the berm.
25. General note: The location of the boundaries of the recharge zone are based on maps provided by the TCEQ and Edwards Aquifer Authority. It is common knowledge that these boundaries are general and not necessarily accurate. The location of the vehicle maintenance facility is based entirely upon these arbitrary boundaries. Considering the potential implications of locating a facility of this type over the recharge zone, the actual boundaries of the recharge zone should be delineated by a qualified professional geologist. This would ensure that fuel storage areas and maintenance areas are not located in areas susceptible to infiltration into the Edwards Aquifer.
26. Areas to Be Treated as Impervious—Sheet 1 of 1: If the fine materials in the quarried rock are self-sealing, I contend that stockpile areas should be listed as impervious. These stockpiles of gravel will contain fine particles which, according to Vulcan, over time will compact under the weight of the stockpile, effectively sealing the ground surface. This is especially true for gravel that is stockpiled prior to washing. It is also true for washed gravel, since only 93% of the fine materials are removed by washing. It is important to note that the entire functionality of the liner of the sedimentation ponds is based on self-sealing nature of these fine particles. Therefore, I would assume that stockpiles, whether washed or not would contain sufficient quantities of small particles to also self-seal the ground surface. In fact, if the self–sealing properties of the fine particles actually occurs, the entire floor of the quarry would probably be considered impermeable because of accumulation and compaction of these materials by equipment and precipitation, regardless of dust control measures. Vulcan needs to determine whether these materials actually self-seal or not. Long-term implications of these self-sealing properties could result in the loss of well over 1000 acres of permeable surfaces on the recharge zone within the area of the quarry.
27. Up-gradient Areas: The method by which the up-gradient watersheds are delineated is not provided. In fact, the delineation of some of the areas appears to be arbitrary.

In addition, the smaller areas of delineation are difficult to identify due to the fact that the boundaries are a mixture of quarry boundaries and watershed lines. For instance, Area 1 appears to be labeled incorrectly in that it lies in the same polygon as Areas 3 and 5. The actual function of these smaller watersheds is not explained. Do I assume that they will flow into the quarry or that they will be bermed, causing ponding of stormwater at the down gradient side of these areas. Detailed explanations of each watershed and methods of controlling flow should be included to make this figure more understandable.

28. Site Plan for Plant Area (Sheet 2 of 9:
    - This plan shows the location of many sensitive karst features across the site, but fails to show how these features will be protected from impacts from construction and operation of the plant and quarry.
    - Additionally, the plan shows recycled water bypass line and an unpaved road crossing Polecat Creek. Although both of these crossings would probably fall under Nationwide Permit 12 or Nationwide Permit 14, they are Federal permits which require coordination with Texas Historic Commission and the U.S. Fish and Wildlife Service.
    - The plan fails to show the geologic outcrops found underlying the equipment maintenance area.
    - Showing the location of animal burrows on this map is understandable, however, showing the location of deer blinds is not necessary.
    - This plan further supports the concept that detailed information on the operation of this facility is extremely important and should be included as part of the WPAP. The function of each of the conveyor belts and rock rushers should be explained in text. A flow chart explaining the entire process should be provided and should include potential sources of contamination and preventative measures to be used to contain contamination throughout the plant site.
    - This figure indicates that the equipment maintenance parking area is located about 600ft. from the boundary of the aquifer recharge zone. Again, this is extremely close to an arbitrary boundary, further justifying careful delineation of the actual boundary to ensure that this facility is not on the recharge zone.
29. Temporary Stormwater Controls (Sheet 3 of 9): The discussion of stockpile area disturbances indicates that no more than ten acres will be cleared at a time. Following clearing, the area will be stockpiled with rocks. At that point, it is stated that the area will be considered as re-established. This is clearly stretching the regulations to consider an area covered with stockpiled material as reestablished when no any attempt to restore vegetation is indicated. I feel that an area would only be considered reestablished if it is brought back to grade and vegetated with native plants.
30. Exhibit 2.1 Overall Site Plan: This plan indicates that no mining will encroach into jurisdictional waterways without proper agency approvals. However, mining appears to only avoid named creeks and tributaries and appears to completely dismiss the presence of minor ephemeral streams. These ephemeral streams appear as indentions along contours and should be described and delineated to determine their jurisdictional status. A complete surface water assessment should be conducted on the site to delineate any jurisdictional waters to determine if a Section 404 permit would be required.
31. Exhibit 2.1 Overall Site Plan: The crossing from Pit 2 to Pit 3 shows placement of a final rock berm across an unnamed tributary to Elm creek. Placement of this berm

would require coordination with the U.S. Army Corps of Engineers and, at the very least, a nationwide permit.

32. Exhibit 2.1 Overall Site Plan: All crossings from various pits show roads crossing jurisdictional waters. Detailed drawings show that these crossings directly traverse the floodplain and stream. It can only be assumed that fill material will be placed into the jurisdictional waters for construction of the haul road. This action would require Nationwide Permit 14 if acres filled are less than 0.5 acres.
33. Exhibit 2.1 Overall Site Plan: The plan indicates that the quarry floor will be located 25 ft. above the top of the aquifer. It is common knowledge that the elevation of the top of the aquifer is highly variable. In the San Antonio area, the top of the aquifer varies from an elevation of 630 ft. MSL to 710 ft. MSL depending on rainfall. Placing the floor of the quarry at an elevation based on the present level of the aquifer seems to be a somewhat presumptuous. If the bottom of the quarry is placed 25 ft. above the aquifer during the dry season, the floor of the quarry could be inundated during a wet season. It is our opinion that the 25 ft. buffer between the bottom of the quarry and the top of the aquifer is not adequate and could present many logistical and environmental problems in the future. This buffer provides little or no protection for water quality.
34. Exhibit 2.1 Overall Site Plan: The detail on the revegetated, compacted final earthen berm indicates that its design may be somewhat faulty. The central core of each berm is comprised of organic matter, topsoil, and sediments all of which are subject to decomposition, water loss, and other structural changes that lend themselves to a decrease in soil volume and increase in density over time. This core material is then covered by another undescribed material approximately 1.5 ft. thick. It is my opinion that the core of each berm is comprised of material that would be subject to instability over time, causing the berm integrity to be compromised at times.
35. Exhibit 2.1 Overall Site Plan: The final rock berm in Quarry Pit 2 encroaches on the 100-year floodplain of Elm creek. Has this been cleared through FEMA or the local floodplain administrator?
36. Exhibit 2.1 Overall Site Plan: It seems quite curious that most of the sensitive geologic features found on the site are scored low. Is this a common finding in this area?
37. Temporary Stormwater Controls Sheet 4 of 9: The temporary stormwater control designs were apparently adapted from the City of San Antonio Department of Public Works Engineering Division. These drawings from the City of San Antonio are not officially stamped by a professional engineer. I would assume that for a project of this size and nature, drawings specific to the site should be used.

COMMENTS ON VULCAN'S RESPONSE TO TCEQ COMMENTS

Question 1:

- Bridges and trestles in this area are known to become clogged with woody materials and other objects moved by floodwaters. Trestles are especially sensitive to this type of problem. The impact of a clogged trestle on flood waters should be studied as part of this project.
- The answer provided for this question appears totally inadequate in that the actual design of the train tracks is not provided, design of the bridge and trestle is not shown, and details on maintenance and spill cleanup is lacking.

- Drippings into the creek bed should be removed immediately, not monthly. These materials will migrate downstream causing pollution of surface waters.
- It is stated that the area under the trestles will be scraped clean of drippings on a monthly basis. In other parts of the plan, it is stated that vegetation in the flood-plain will not be disturbed. These procedures seem to contradict each other.
- If soil is scraped from the stream bottom, will the remaining soil be sampled to determine if all contaminants have been removed?
- What procedure will be used to contain a major spill of fuel or hydraulic fluid if released from a locomotive or other large equipment into the stream channel? I investigated the release of gasoline into a stream approximately two years after the incident occurred. The release flowed into a perennial stream which should restore itself much more rapidly than any ephemeral or intermittent stream due to constant dilution by perennial waters. However, even after two years, no aquatic or amphibious life was found in the stream for over one mile downstream. I feel that a spill prevention plan should be in place to prevent pollution of surface waters below and in the vicinity of the train tracks.

Question 2:

- It is stated that a large portion of the buffer area will be left in its native condition. This is ambiguous and an exact distance or area should be used to describe the area to be protected.
- The description of mining operations is cryptic at best. Even the most unknowledgeable person would be able to develop the process list that is provided in this question. Much more detail should be required. Each of the bulleted items need to be explained in detail. For example, how will the area be cleared? What equipment will be used to clear the area? What is the disposition of vegetation following clearing? Will it be burned? Will it be hauled? Will it be chipped? How will sensitive features be protected?
- The list includes drilling and blasting. No where in the plan is the procedure for blasting described. What materials will be used for blasting? Are these materials hazardous? How deep will drilling be? Will the borings be checked for sensitive features before blasting? How will sensitive features below the surface be protected during blasting if they have not been identified at the surface?

Question 3:

The answer to this question indicates that the maintenance area does not flow into the recharge zone. No evidence is provided to support this statement. Considering the fact that this facility is located within 600 ft. of the boundary of the recharge zone, I feel that a geologic assessment should be conducted to ensure that the site is not located on the recharge zone and not base the fact on the general boundary provided on the aquifer map.

Question 4:

All faults should be clearly delineated in the field prior to blasting activities. Inferred location of these faults is unacceptable if they're to be protected during blasting procedures.

Question 6:

The maximum mean depth within the proposed quarry should be based on the location of the top of the aquifer at its highest level.

Question 7:

It is obvious that more onsite borings should be conducted to determine the exact level of the Edwards aquifer on the quarry site. A grid of monitoring wells should be drilled on site to map the elevation of the top of the aquifer as well as to determine the direction of flow. The elevation of the aquifer should not be based on data collected in the 1950's, especially when those elevations range from 976 ft. to 687 ft.

Question 8:

It is difficult to believe that only five gallons of hydrocarbons will be kept on site for the quarry. Most equipment used for the quarry has hydraulic fluid reservoirs greater than 25 gallons capacity. One would assume that storage of more than five gallons of hydrocarbons would be required. Also, one would assume that much of the equipment would be fueled on site, possibly by use of fuel transport vehicles. This is not addressed by the plan. An important process to be discussed would be on-site lubrication and fueling of equipment.

Question 12:

Support for use of self-sealing sediments for sedimentation ponds is inadequate. Permeability as determined in the lab is not the same as for fine sediments accumulating in a pond naturally. It is well known that sediments can seal ponds over time but this takes many years of deposition and compaction. Information concerning the time required for the sediments to settle, compact, and seal is not provided. When the bottom of the pond is sealed, is there any assurance that the seal will not be compromised during pond maintenance and removal of excess sediments? Because this quarry is located in such close proximity to the top of the aquifer, and artificial or concrete liner should be required to ensure protection of the aquifer.

It is also curious that the plan purports that the fine materials created by blasting are self-sealing when contamination is discussed. These dusts will cover the entire bottom of the quarry and will be subsequently compacted in place by mining equipment. Thus, if the self-sealing properties of these materials is a fact, then the entire quarry should be considered an irreversibly impermeable surface.

Question 15:

The spill prevention plans are inadequate. No procedure for spills on permeable surfaces is provided. These are the areas of greatest concern. Also, methods to analyze soils on the bottom and sides of pits excavated to remove hazardous spills are not provided. The actual procedure for spill response by employees is not listed. The answer only provides generalities and not specifics. The response for large spills only lists agencies to notify and not methods for first response.

This section indicates that fueling and maintenance may occur on-site, but other sections indicate that sufficient materials will not be present on-site to provide this service. Also, the plan only addresses prevention of the flow of spills into surface waters. No procedure is provided to prevent spill infiltration into the aquifer.

Question 20:

Buildup of drippings in the streambed over a month period is no an acceptable option. Those drippings will eventually be deposited downstream if a storm event occurs prior to removal. The streambed should be inspected daily and drippings removed by hand shoveling if they are found. This would ensure that only minor quantities of hydrocarbons may find their way to waters downstream.

Question 29:

This question is very important and to state that the difference between the top of the aquifer and the potentiometric surface cannot be quantified is unacceptable. If this is the case, then perhaps some other measurement should be used.

Question 37:

It should be noted that if material from the conveyors falls into the channel of Polecat Creek, this could be construed of placement of fill into waters of the U.S. and coordination with the U.S. Army Corps of Engineers (USACE) would be required. The method and timing of removal of materials falling into the creek should be coordinated with the USACE.

Question 48:

Haul roads will require Nationwide Permit 14 regardless of the area impacted or filled. If less than 0.1 acres is filled, notification of the USACE is not required unless cultural resources or endangered species are impacted by the activity. Coordination with the USFWS or THC is required for this action.

Question 50:

Earlier in the responses, it was stated that the potentiometric measurement would be well above the actual top of the aquifer. However, in this table, the top of the aquifer and the potentiometric surface elevation were the same. This leads me to believe that the previous statement does not hold and the quarry will be excavated to 25 ft. above the top of the aquifer.

Attachment A: Nature of Exception

The exception is correct that water from the quarry will not discharge into surface waters. However, water will discharge into the aquifer. Proper control measures should be incorporated into the plan to protect the aquifer with permanent BMPs. However, if the fine materials actually self-seal on the bottom of the quarry, it would no longer be permeable after blasting and the aquifer would be protected. If this is the case, then the impermeable surfaces must be increased to well over 1000 acres.

I sincerely appreciate you considering these comments. This is a very large project that has significant impacts on the Edwards Aquifer and could have far reaching impacts on the citizens of the San Antonio metropolitan area. As you are aware, there are very few checks and balances for the establishment of quarries in the state of Texas and the WPAP is one of the few permits that allow for careful review of the design, construction and operation of the quarry with respect to the environment and the precious groundwater resources of this region. We have confidence that the TCEQ will do an excellent job in ensuring that Vulcan meets and even exceeds the regulations and guidelines for protection of surface waters and the Edwards Aquifer.

If you would like to discuss these comments or have any questions, feel free to call me at 210-317-7267.

Very truly yours,

Lynn M. Kitchen, Ph.D.
Principal Scientist

Lynn M. Kitchen, Ph.D.
Principal Scientist

EDUCATION

B.S.	Wildlife and Fisheries Sciences	Texas A&M University	1976
M.S.	Range Science	Texas A&M University	1977
Ph.D.	Agronomy-Crop Science	University of Kentucky	1980

PROFESSIONAL BACKGROUND

Dr. Kitchen is an environmental scientist with broad-based experience in various types of environmental studies. He has over thirteen years of experience in investigation of hazardous waste problems, with special emphasis on the interaction of pesticides in the environment. In addition, Dr. Kitchen has extensive experience in training and education and has served as an associate and assistant professor at two major universities. He has managed numerous projects involving NEPA issues, environmental investigations of wetland areas, and threatened and endangered species.

Dr. Kitchen served as the project manager for the development of a Land Use and Management Plan for the natural areas owned by the City of San Antonio. He is currently preparing the Integrated Natural Resource Management Plan and associated EA for the Nellis Air Force Base and Range, comprising over 3.0 million acres of land. Dr. Kitchen has served as project leader for preparation of environmental assessments for three international bridges on the U.S.-Mexico border, including the Pharr-Reynosa International Bridge, the Los Ebanos-Gustavo Diaz-Ordaz International Bridge, and the Donna-Rio Bravo International Bridge. He has prepared Records of Environmental Consideration and EAs for various project projects at Ft. Bliss, Ft. Sam Houston, and Nellis Air Force Base for the U.S. Army Corps of Engineers.

Dr. Kitchen has a great deal of experience in the delineation of wetlands and development of mitigation plans in Texas, Ohio, Mississippi, Louisiana, and Virginia. He has successfully negotiated and obtained Section 404 permits and Nationwide permits in several locations across the U.S. He has a practical knowledge of the Clean Water Act and its impact on construction and other projects.

Dr. Kitchen has conducted enumerable projects involving the use of GIS and image analyses in the field of environmental science. He lead a project at Kelly AFB to develop a GIS database for environmental issues encountered during the privatization of the base. He has used GIS to model vegetational communities,

predict recovery of ecosystems following impacts, soil remediation, remedial design, wetland delineation and mitigation design, and facility siting/management. He developed a GIS model to be used by the City of San Antonio, to determine the potential level of sensitivity of natural resources in newly acquired lands and another model to assist land managers in determining the proper use of natural areas based on type of improvement and sensitivity of the environment.

MEMBERSHIPS

Society of Wetland Scientists
Air and Waste Management Association

EXPERIENCE

NEPA ENVIRONMENTAL ASSESSMENTS

- Currently preparing the EA for the Integrated Natural Resource Management Plan for Nellis Air Force Base and The Nevada Test and Training Range.
- Preparing the natural resources, water resource, and archeological sections of the EIS for the expansion of the San Antonio International Airport.
- Assisting in the review and comment of an EIS prepared for the Surface Transportation Board for the construction of a new railroad to a proposed limestone quarry in Medina County, Texas.
- Preparing the environmental section of a feasibility study for the construction of a new international bridge in Del Rio, Texas.
- Preparing the EA for the construction of a new communications Squadron Facility in Nellis AFB, NV.
- Preparing the EA for expansion of a landfill at the Tonopah Test Range south of Tonopah, NV.
- Preparing the EA for the privatization of housing at Barksdale AFB, LA.
- Prepared the EA for the construction of a shoppette at Fort Sam Houston in San Antonio, Texas.
- Prepared an environmental assessment for the construction of a golf green in Paso Lajitas, Mexico.
- Conducted field inspections and documentation for the FCC EAs for over 30 cellular antenna sites for several cellular telephone providers in Texas.
- Reviewed the technical content of an Environmental Assessment prepared by the Air Force for the establishment of a red horse practice area at Kelly AFB in San Antonio, Texas.
- Prepared a Limited Environmental Assessment for eight antenna sites for Houston Cellular to meet the requirements of an FCC license.

- Provided technical review of the Biological Assessment Section of the Environmental Impact for the privatization of Kelly AFB in San Antonio, Texas.
- Prepared Environmental Assessments according to FCC requirements for 9 antenna sites for PrimeCo in New Orleans, Louisiana.
- Prepared Environmental Assessments according to FCC requirements for over 140 antenna sites in Arkansas and Oklahoma for Southwestern Bell Communications.
- Prepared a Record of Environmental Consideration for 6 solid waste management units at Ft. Bliss prior to remediation for hazardous wastes. Included investigation of wetlands, endangered species, and sensitive habitat - El Paso TX.
- Prepared a draft EA for the Donna-Rio Bravo International Bridge - Donna TX. (Project not completed due to lack of funding)
- Assisted in the preparation of the original environmental assessment for the construction of an International Bridge - Los Ebanos TX.
- Prepared the revised EA for the Los Ebanos International Bridge to accommodate a change in the location of the bridge - Los Ebanos TX.
- Prepared the environmental assessment for the Texas Department of Transportation and the General Services Administration for their facilities associated with the Pharr-Reynosa International Bridge - Pharr TX.
- Assisted in the preparation of the original environmental assessment for the Pharr-Reynosa International Bridge on the Rio Grande River - Pharr TX.
- Prepared the environmental assessment and assisted on the design of constructed wetlands for a low tech wastewater treatment facility at the DeAnda/Saenz Colonia near Mercedes, Texas.
- Assisted in the development of a comprehensive city plan with a major emphasis on the environmental issues associated with the development of a river corridor. These issues include wetlands, endangered species, water quality control, and other impacts on biotic components of the environment - Kerrville TX.
- Provided biological monitoring services to ensure compliance of McCarthy Brothers Co. to recommendations in the EA and FONSI for the Pharr-Reynosa International Bridge. Includes the restoration of a prior converted wetland into a wetland to collect stormwater from the bridge - Pharr TX.
- Prepared the Biological Resources Section Application for Certification (EA) for an electric co-generation plant - Sacramento CA.
- Conducted an aquatic/terrestrial biological survey to determine the impact of a release of unleaded gasoline from a pipeline on the biotic community - Gonzales TX.

NATURAL RESOURCE AND PARKS PROJECTS

- Prepared an Integrated Natural Resources Management Plan to outline proper land management and resource conservation for Air Force personnel at Nellis Air Force Base, Nevada.

- Primed the team that developed a Land Use and Management Guidance Document for approximately 5000 acres of natural areas recently acquired by the City of San Antonio under Proposition 3. The plan included the development of two GIS models to assist land managers in developing plans for the areas.
- Assisting Brooks City-Base with the design of a detention pond system to include wetlands and streams as well as a nature trail environment for tenants at the facility in San Antonio, Texas.
- Assisted with the preparation of a master plan for the improvement of the South Lions Skate Park.
- Assisted with the preparation of a master plan for the improvement of the South Lions Park and proposed natural area.
- Assisted Bexar Land Trust in the preparation of a baseline report for a conservation easement for a 404 acre property in Kendall County, Texas.
- Assisted Bexar Land Trust in the preparation of a baseline report for a conservation easement for a 14 acre property in San Antonio, Texas.
- Assisted Bexar Land Trust in the preparation of a baseline report for a conservation easement for a 150 acre property in Kendall County, Texas developed for the preservation of black-capped vireo and golden-cheeked warbler habitat.
- Assisted in the preparation of the SAWS Retreat Center master plan in south Bexar County, Texas.

WETLAND AND ENDANGERED SPECIES PROJECTS

- Assisted in the field work and report preparation for monitoring of a wetland and stream mitigation site for 5 years at a landfill in Hancock County, Ohio.
- Preparing a Section 404 Permit for the expansion of a landfill in Shreveport, LA.
- Preparing a Nationwide Permit 39 for the construction of a shopping center in northwest San Antonio, Texas.
- Conducted a surface water assessment for the improvement of Kreiwald Road in Bexar County, Texas.
- Prepared a biological assessment for Las Vegas Buckwheat and Las Vegas Bearpoppy on a 400 acres parcel of land for Nellis AFB in Nevada.
- Prepared a Biological Monitoring report for Desert Tortoise during the construction of a target facility at the Nevada Test and Training Range north of Las Vegas, NV.
- Conducted a wetland and stream assessment for a shopping center in Kyle, Texas. Recommendations for avoidance allowed the shopping center to be constructed without the need for a Section 404 Permit.
- Prepared the Biological Assessment the Desert Tortoise for submission for a biological opinion for the USFWS for at Nellis AFB, NV.

- Assisted the City of Stockdale in redesigning a flood plain in a manner that avoided impacts of waters of the U.S. and avoided the need for a Section 404 Permit.
- Conducted initial assessment of surface waters through aerial photographs and GIS for a 100-mile pipeline for transmission of water from a collection site in Gonzales County, Texas to Northeast Bexar County for San Antonio Water System.
- Currently conducting surface water assessments and delineations for preparation of a Nationwide Permit 12 for the installation of a 20-mile segment of the Gonzales County Carrizo Aquifer Program for San Antonio Water System.
- Developed and designed the mitigation plan for the rechanneling of a stream by a developer in east Austin, Texas.
- Assisted in the assessment of stream and wetland habitat potentially impacted by a new development on the banks of Lake Travis in Travis County, Texas.
- Prepared the Nationwide Permit 3 for the repair and restoration of the San Antonio River at Brackenridge Park
- Prepared a Nationwide Permit 14 for road improvements in the Val Verde Estates subdivision in Del Rio, Texas.
- Coordinated a survey and prepared a report for the U.S. Air Force on the impacts of military action on the desert tortoise, an endangered species potentially found on Nellis Air Force Base, Nevada.
- Prepared the Section 404 Individual Permit and mitigation plan for construction of a shopping center in Kyle, Texas
- Currently preparing a Nationwide Permit 39 and mitigation plan for construction of a shopping center in Leander, Texas.
- Prepared the application for a Section 404 Permit for the construction of a new landfill near Wilmot, OH. Currently, the antidegradation report and mitigation plan are being developed for impacts to a stream and 11.8 acres of wetlands. The project is currently in the final permitting phase and a mitigation plan involving the creation of about 7,000 ft. of intermittent stream and 17.4 acres of wetlands has been submitted to the USACE.
- Prepared the Nationwide Permit 12 pre-construction notification and Section 401 Certification for the installation of a 12-mile long sewer line along a stream and river in Muskingum County, Ohio. The alignment was subsequently changed and an amendment was prepared for the changes.
- Assessed impacts to surface waters for the construction of a shopping center in northwest San Antonio, Texas. The assessment resulted in design changes to prevent significant impacts and Section 404 permitting for the project.
- Assessed a wetland and stream for the construction of a shopping center in Georgetown, Texas.
- Assessed a stream for jurisdictional status for the construction of a shopping center in Laredo, Texas.

- Investigated the causes of algal infestations and leakage of ponds located at the Lajitas Resort in Lajitas, Texas.
- Prepared the Nationwide Permit 14 and endangered species assessment for the construction of a 3-mile road section in Northwest Bexar County for Bexar County. The road crosses several ephemeral and intermittent streams.
- Assessed a wetland adjacent to a landfill in Bedford, Ohio to avoid impacts that might require Section 404 Permitting.
- Prepared Nationwide Permit 3 notifications for 29 excavation/inspection sites for a pipeline for Colonial Pipeline Company in south Louisiana. The work included coordination with the New Orleans District of the U.S. Army Corps of Engineers, Louisiana Department of Natural Resources, and the U.S. Fish and Wildlife Service.
- Prepared a Coastal Use Permit for a pipeline repair for Colonial Pipeline Company at a site on the southwest side of Lake Borgne near Shell Beach, LA. The permit is currently being reviewed.
- Prepared a Coastal Use Permit for a pipeline repair for Colonial Pipeline Company at a site on the north side of Lake Lery near Kenilworth, LA.
- Prepared a Coastal Use Permit for a pipeline repair for Colonial Pipeline Company at a site on the south side of Lake Lery near Kenilworth, LA.
- Prepared a Nationwide Permit 12 and endangered species assessment for the construction of a 2-mile sewer line for the Southside Independent School District in San Antonio, Texas. The sewer line was to be bored under the Medina River.
- Conducted a surface water assessment for the proposed construction of a park in Live Oak, Texas.
- Conducted and endangered species (Golden Cheeked Warbler) and wetland assessment for the construction of a sports complex on the west side of San Antonio, Texas.
- Conducted an Endangered species and surface water assessment for the proposed site for construction of the Alamo Community College Northeast Campus.
- Prepared a surface water assessment for the rehabilitation of the San Antonio River at Brackenridge Park in San Antonio, Texas. It was determined that no wetlands would be impacted by the project. Construction along the river qualified for NWP-3 that allows for maintenance and repair activities along surface waters.
- Conducted a wetland and endangered species assessment for a 2300 acre parcel of land on Padre Island approximately 15 miles north of South Padre Island. Least tern habitat was observed and several issues identified including seagrass beds in Laguna Madre, coastal wetlands, coastal management zone, and jurisdictional areas below the mean high tide mark.
- Conducted a wetland and endangered species assessment for the replacement of a pipeline crossing an unnamed tributary to Black River near Bovina, Mississippi. The site was found to have no endangered species issues and fell under NWP-12 with no required notification.

- Conducted a wetland assessment for a 480 ft. guy wire antenna tower south of Port Isabel.
- Conducted a wetland assessment and stream jurisdictional determination for a parcel of land on the northwest side of San Antonio for H-E-B Grocery Company.
- Prepared a wetland delineation and Nationwide Permit 12 for the installation of a sewer line in Laredo, Texas.
- Served as technical advisor for the design of a wetland stormwater treatment system and wetland mitigation plan for the construction of a power plant near Jackson, OH.
- Conducted a wetland assessment and delineation for the construction of a retail grocery store in Friendswood, Texas. Two small wetlands were found on the site and it was determined that the site qualified for a post construction notice under Nationwide Permit 39.
- Conducted a wetland delineation for the expansion of a retail grocery store in Waco, Texas. A wetland was found on the site, but the wetland was determined to be potentially isolated and may not require permitting and a NWP-39 pre-construction notification was not required.
- Conducted a wetland assessment for excavation and maintenance of a pipeline in Beaumont, Texas. It was determined that the excavation would not impact or fill wetlands and a Section 404 Permit would not be required.
- Assisted in the development of the wetland plant design for a 10-acre constructed wetland to be used for treatment of wastewater from the City of Lajitas, Texas. The project is currently in the design phase and construction is expected to be completed by September 2001.
- Conducted a wetland delineation for an 80 acre parcel of land near Krotz Springs, LA. The site consisted of a matrix of small wetlands which were mapped using transects and eventually topographic analyses. Specific mapping was used to locate an upland area for expansion of an oil refining facility.
- Currently preparing a Section 404 Permit for the construction of a parking lot for the Veterans Administration Hospital in San Antonio, Texas. Project involves filling of an ephemeral stream and compensation for impacts by enhancement of the existing stream channel.
- Reviewed a wetland delineation prepared for the construction of a new store in Plano, Texas. Found that an upland ditch had been improperly designated as jurisdictional waters of the U.S. Subsequently rewrote the wetland delineation to reflect changes.
- Prepared a Section 404 permit for the Hancock County Landfill near Findlay Ohio. The project included preparation of the Antidegradation Report and Section 401 Certification and development of a formal mitigation plan for construction of a new stream and 4.0 acre wetland. The site is now in the 5-year monitoring phase for mitigation.

- Delineated a 0.6 acre pond and prepared a report for the USACE to have a 1995 determination by the USACE to be extended for a future site of a grocery store. The site is a well-developed urban area in Rockport, Texas and the client desires to fill the pond to allow for construction of the store and parking facility.
- Conducted a wetland assessment and endangered species habitat survey (Black-Capped Vireo and Golden Cheeked Warbler) for a 1000-acre ranch near Canyon Lake, Texas.
- Preparing the Section 404 Permit for the rechanneling of Chippewa Creek near a Type IV landfill in Cleveland, Ohio. The project is currently in the pre-application phase.
- Conducted a Golden-Cheeked Warbler/Black-Capped Vireo habitat assessment for a 1000-acre ranch near Canyon Lake, Texas.
- Developed a GIS model to predict the establishment of new wetlands around a proposed reservoir in King William, Virginia. Data was collected from established reservoirs in the area and used as a basis for the model.
- Assisted in the design and construction of a treatment wetland system at a carbon black plant near Addis, LA. The system was used to treat sewage originating from bathrooms and showers in the plant.
- Delineated wetlands and determined level of damage caused by the release of sediments from a newly constructed landfill at Stewart Air National Guard Base in Newburgh, New York.
- Conducted a field reconnaissance to determine if a proposed pipeline to be installed by the San Antonio Water System would impact waters of the U.S. or if construction might require Section 404 Permitting. The project included documentation of vegetation communities associated with the impacted riparian areas and methods used to avoid and/or mitigate impacts.
- Conducted a wetland delineation for an electric cogeneration plant and associated pipeline for a confidential client in Geismar, Louisiana.
- Prepared a report to determine the status of a wastewater treatment lagoon as jurisdictional waters of the U.S. for a confidential client in Terra Haute, Indiana.
- Assisted in designing a constructed wetland for treatment of wastewater from East Central High School in Bexar County, Texas.
- Prepared a wetland delineation report and Nationwide Permit 26 for the Hancock County Landfill Expansion project near Findlay OH.
- Prepared a wetland delineation report and Section 404 permit application for the Franklin County Landfill Expansion near Columbus OH.
- Prepared a wetland delineation report and Section 404 permit for expansion of a water supply plant near Akron OH. Developed a mitigation banking site for compensation of lost wetland acreages associated with the water supply plant expansion.

- Prepared a Section 404 Permit and wetland delineation for the construction of a paint shop for Ford Motor Company in Lorain County, OH.
- Conducted wetland field reconnaissance study for a land parcel to be acquired by Abbott Laboratories - Columbus OH.
- Provided technical assistance in the development of a remedial design for contaminated wetlands for an industrial client - Jackson MS.
- Assisted in a wetland field reconnaissance study for a wastewater pump station to be constructed for the City - Houston TX.
- Provided biological monitoring services to ensure compliance of McCarthy Brothers Co. to recommendations in the EA and FONSI for the Pharr-Reynosa International Bridge. Included the restoration of a prior converted wetland into a wetland to collect stormwater from the bridge - Pharr TX.
- Audited pipeline, well, and compressor facility documentation for a client to determine if the sites were in compliance with Section 404 Permitting regulations of the Clean Water Act - Tuscaloosa County AL.
- Assisted the Jackson Office of Malcolm Pirnie by reviewing a wetland delineation and EPA wetland mitigation opinion for a Superfund site - Columbia MS.
- Conducted a wetland field reconnaissance study for GATX to locate potential wetland areas on a facility location. Completed a wetland assessment followed by a delineation for the Metropolitan Transit Authority - Houston TX.
- Conducted a habitat survey for Black-Capped Vireos and Golden-Cheeked Warblers, two federally endangered species, for a confidential client in San Antonio TX.

ENVIRONMENTAL SITE ASSESSMENTS

- Prepared the Affected Property Assessment Report and Response Action Completion Report for the cleanup of an industrial facility in San Antonio, Texas. The facility was contaminated with lead and nickel. The reports are currently under review by the TCEQ.
- Provided technical support and research for litigation and mediation over the cleanup of an office furniture painting facility in San Antonio, Texas. Work included review of the Affected Property Assessment Report and other historic documents pertinent to the case.
- Prepared an ESA for the purchase of a gas collection and compressor facility near Moore, Texas
- Prepared a Phase I and Phase II ESA for a commercial building/warehouse on Rittiman Road in San Antonio, Texas. The Phase II report included soil sampling and analyses, coordination of a mold survey, and working with the TCEQ for regulatory assistance and file review.
- Collected and analyzed soil samples near a mercury mine near Terlingua, Texas.

- Prepared ESAs for two pesticide storage facilities in Dallas and Oklahoma City for a confidential client.
- Conducted the field investigations for the preparation of NEPA/Section 106/Phase I Site Assessments for over 30 cellular antenna sites in central Texas.
- Prepared an ESA for the acquisition of an adhesives facility for Arlon Adhesive and Films in Dallas, Texas. The ESA included a cursory environmental audit and a Phase II study which found a small, isolated area of soil contaminated with toluene.
- Managed a project that conducted an environmental compliance audit of a canning facility located in Crystal City, Texas.
- Managed the preparation of an environmental site assessment and asbestos survey of a property located in San Antonio, Texas for the United Services Automobile Association. The project also included a limited Phase II ESA to determine if fill material contained any petroleum hydrocarbons or RCRA Metals.
- Prepared an environmental site assessment for two separate housing projects to be constructed in Eagle Pass, Texas.
- Prepared an ESA for a golf course near Canyon Lake, Texas.
- Prepared an ESA, wetland assessment, and endangered species study (Golden-Cheeked Warbler/Black-Capped Vireo) for a 1000-acre ranch near Canyon Lake, Texas.
- Prepared an ESA for a housing project in Cotulla, Texas.
- Project manager for preparation of 11 ESAs for potential land acquisitions for the San Antonio Water Systems in Medina and Bexar Counties, Texas.
- Assisted in the preparation of an ESA for San Antonio Water Systems for a 100-ft buffer around Mitchell Lake south of San Antonio, Texas.
- Prepared an Environmental Compliance Audit and Environmental Site Assessment for a printing company building in Oklahoma City, OK.
- Prepared environmental site assessments for 140 antenna sites for Southwestern Bell Communications in Arkansas.
- Prepared environmental site assessments for 9 antenna sites for PrimeCo in New Orleans, Louisiana.
- Project leader for selection of an environmentally feasible site for a multi-modal transportation terminal for the Municipal Planning Organization - San Antonio TX.
- Assisted in the preparation of an environmental audit for two properties potentially acquired by Wendy's, Inc. - San Antonio TX.
- Prepared a property transfer audit for the U.S. General Services Administration Customs and Immigration Facilities associated with the Pharr-Reynosa International Bridge - Pharr TX.
- Conducted a Site Assessment for the Harlandale Independent School District for the acquisition of 20 acres for an athletic facility - San Antonio TX.

- Conducted a Site Assessment for a multilevel building for Kinetic Concepts, Inc. - San Antonio TX.

GIS PROJECTS

- Created two models for assisting the Parks and Recreation Department of the City of San Antonio to use as a decision-making tool for developing land use and management plans for natural areas owned by the city.
- Developed a GIS database for the environmental and safety management of Air Force properties being transferred to commercial businesses at Kelly AFB. Currently, the soil management portion of the database is complete and the asbestos and safety databases are being developed and programmed in ArcView and Access 97.
- Preparing a GIS database to inventory, model, and spacially locate plant communities on the Government Canyon State Natural Area near San Antonio, Texas using currently available maps and satellite imagery/ground truth data.
- Used GIS to map the project site and design a rechanneled stream and 6.7 acre wetland for mitigation required by a Section 404 Permit at the Hancock County Landfill near Findlay, OH. Work included developing a 3-D model to assist in estimating the watershed to provide surface water for the wetland mitigation site.
- Used GIS to map geological and biological features for a 21,000-acre property around Lajitas, Texas for use in land resource management.
- Developed a GIS model to predict the establishment of new wetlands around a proposed reservoir in King William, Virginia. Data was collected from established reservoirs in the area and used as a basis for the model.
- Used GIS to assist in modeling groundwater response to environmental conditions and pumpage rates for three aquifers in Kendall County, Texas using ArcView.
- Mapped and determined correlations and potential causes of incidences of high lead concentrations in the blood of adults and children in Bexar County using ArcView.
- Determining the high-risk area for the establishment of mosquito-borne diseases in Bexar County, Texas using ArcView.
- Assisted in preparing spacial maps illustrating the establishment of sunflower plant communities in a wetland complex in south Texas.
- Served as Task Leader to use GIS mapping techniques in the siting of a landfill for the City of San Antonio TX. GIS was used to integrate public opinion and technical criteria to determine the desirable sites for landfill siting.
- Provided GIS training (ArcView) for employees at Operational Technologies, Inc. in San Antonio, Texas.
- Prepared a report to determine the feasibility of providing solid waste collection and transport services for unincorporated areas of Bexar County. GIS mapping techniques were used in determining waste centroids, transportation costs, and overall collection costs.

- Used GIS to prepare the action plans for the remediation of hazardous waste spills at service centers operated by Bexar County. Mapping techniques were used to delineate contaminated areas and estimate costs for various risk reduction scenarios.
- Mapped and documented contaminant levels associated with a vehicle maintenance facility in Midland, Texas using ArcView.
- Documented excavation and cleanup activities using GIS at a vehicle maintenance facility in New Orleans, Louisiana.
- Using ArcView, prepared a grid base map and database for documentation of the contaminant levels and remediation of a jet parking and fueling area at Laughlin Air Force Base near Del Rio, Texas.
- Used ArcView to rectify an aerial map and document the level of carbon tetrachloride in monitoring wells for groundwater modeling for a vehicle maintenance facility near Creola, Alabama.
- Delineated concentrations of various chemical constituents located in a solid waste unit at Ft. Bliss, El Paso TX. GIS mapping techniques were used to map and inventory the contaminated areas.
- Used GIS mapping techniques to develop a remedial action plan for the Mississippi Department of Transportation on a site used for the expansion of U.S. Highway 61, in Tunica County, MS. Various pesticides contaminated the site.
- Used GIS mapping techniques to delineate areas contaminated by various petroleum products due to a leaking pipeline at a petroleum plant in St. Gabriel LA.
- GIS was used to delineate wetlands and to determine and site a mitigation project in Akron OH.
- Used GIS mapping techniques to locate and assess wetlands located on the site of a future landfill in Wilmot OH. Functional values and attributes of the wetlands were calculated, stored and illustrated using GIS. The watershed and storm volume feeding proposed wetlands was determined using ArcView.

SOLID WASTE PROJECTS

- Prepared bid documents and contracts for solid waste collection and transport for The Woodlands TX.
- Conducted a wetland impact investigation for runoff from a landfill at Stewart Air National Guard Base in New Jersey.
- Project leader for the solid waste screening study for Montgomery County which was used to supplement future solid waste planning activities in Subregion I of the Houston Galveston Area Council.
- Preparing the Section 404 Permit for the rechanneling of Chippewa Creek near a Type IV landfill in Cleveland, Ohio. The project is currently in the pre-application phase.

- Task leader for the award winning site selection project for a Regional Environmental Enterprise Zone (including a 1000-acre landfill) using GIS Mapping and other techniques - San Antonio TX. Also assisted in the development of the conceptual design of the facility.
- Project Leader for the development of a solid waste collection and transport feasibility study for the unincorporated areas of Bexar County TX.
- Project leader for the delineation of wetlands, preparation of the Section 404 Permit, preparation of the Section 401 Certification Antidegradation Report, and design of a mitigation plan for construction of the Ridge Landfill near Wilmot, Ohio. Approximately 38 acres of wetlands and deep water habitat were evaluated and delineated for this project.
- Prepared a wetland delineation report and Section 404 Permit for the Hancock County Landfill Expansion project near Findlay OH.
- Prepared a wetland delineation report and Section 404 Permit application for the Franklin County Landfill Expansion near Columbus OH.
- Prepared a wetland and riparian community delineation report, Section 404 Permit application, and Section 401 Certification Application and Antidegradation Report for the rechanneling of a stream adjacent to the Hancock County Landfill Expansion project near Findlay OH. The project includes the construction of a new streambed and a 6.7 acre wetland for mitigation.
- Served as project leader for the development of an environmental training curriculum and associated courses for the Lower Colorado River Authority, Austin TX. The curriculum includes extensive training in solid waste management, procedures, and regulations.
- Project leader for preparation of the Regional Solid Waste Management Plan for the Alamo Area Council of Governments - San Antonio TX.

HAZARDOUS WASTE PROJECTS

- Project leader for the cleanup of an industrial site in San Antonio, Texas following corrective action. The site was contaminated with petroleum hydrocarbons, lead, nickel, and chromium. The APAR and RACR have been completed for the site are currently being reviewed by the TCEQ.
- Reviewed and audited environmental records for HEB Grocery Stores in Texas
- Prepared 11 different Integrated Contingency Plans for the Greater Kelly Development Corporation, EG&G-MSSA, and other tenants at Kelly AFB.
- Project leader for the preparation of an environmental compliance audit for the Silgan Plant in Crystal City, Texas.
- Reviewed and rewrote the SPCC Plan and Pollution Prevention Plan for GKDC at Kelly AFB.

- Project leader for a site audit and remediation for the property transfer of a sand mine near Brady, TX.
- Project leader for an environmental compliance audit of all Bexar County Public Works Service Centers. The audit concentrated on Right-To-Know, Hazard Communication, hazardous waste and material handling and storage, air quality, stormwater, and other environmental issues - San Antonio TX. The project is currently entailing remediation of historic spills. GIS is being used to delineate areas of excavation and estimate remediation costs.
- Prepared a Record of Environmental Consideration for 6 sites prior to remediation for hazardous wastes. Includes investigation of wetlands, endangered species, and sensitive habitat - El Paso TX.
- Providing technical assistance in the development of a remedial design for contaminated wetlands for an industrial client - Jackson MS.
- Conducted an aquatic/terrestrial biological survey to determine the impact of a release of unleaded gasoline from a pipeline on the biotic community - Gonzales TX.
- Provided technical review for a project determining the unit costs, application rates, categorization and substitution of various pesticides used for urban pest control in New York City - New York City Water Board, NY.
- Assisted the Jackson Office of Malcolm Pirnie by reviewing a wetland delineation and EPA wetland mitigation opinion for a Superfund site - Columbia MS.
- Assisted in summarizing information for a remedial investigation report for a multi-site UST project for the Texas Natural Resource Conservation Commission - South Texas.
- Assisted the environmental group in Albany, NY on a remediation project for PCB contaminated dredge material and soil from the Hudson River. The project is determining a method to model and subsequently minimize the potential hazards developing from PCB contaminated dredge material that will be stored in a containment area near the river - Albany NY.
- Assisted in writing remedial investigation report for a UST project on Durango Street. Conducted field sampling and managed data and report writing for an industrial/UST site in downtown San Antonio TX.
- Project leader for selection of an environmentally feasible site for a multi-modal transportation terminal for the Municipal Planning Organization - San Antonio TX.
- Conducted a Site Assessment for a multilevel building for Kinetic Concepts, Inc. - San Antonio TX.

REFEREED PUBLICATIONS

1. Kitchen, L.M., C.J. Scifres, and J.L. Mutz. 1980. Susceptibility of selected woody plants to pelleted picloram. J. Range Manage. 33:349-353.

2. Kitchen, L.M., C.E. Rieck, and W.W. Witt. 1980. Absorption and translocation of ^{14}C fosamine in three woody species. Weed Research 20:285-289.

3. Kitchen, L.M., W.W. Witt, and C.E. Rieck. 1981. Inhibition of chlorophyll accumulation by glyphosate. Weed Sci. 29:513-516.

4. Kitchen, L.M., W.W. Witt, and C.E. Rieck. 1981. Inhibition of delta-aminolevulinic acid synthesis by glyphosate. Weed Sci. 29:571-577.

5. Morris, D.D., L.M. Kitchen, and J.F. Yoder. 1983. A simple, flexible computer program for weed control research. J. American Soc. of Sugar Cane Tech. 3:28-33.

6. Kitchen, L.M., J.F. Yoder, J.D. Smith, and T.R. Harger. 1985. Sugarcane Tolerance to DPX-5969 and DPX-5967. J. American Soc. Sugar Cane Tech. 5:22-26.

7. Ali, A.D., T.E. Reagan, L.M. Kitchen, and J.L. Flynn. 1986. Effects of johnsongrass (Sorghum halepense) density and borer (Diatraea saccharalis) damage on sugarcane yield. Weed Sci. 34:381-383.

8. Kitchen, L.M., J.F. Yoder, and J.D. Smith. 1986. Feasibility of using layby application of herbicides for weed control and yield enhancement in sugarcane. J. Amer. Soc. Sugar Cane Tech. 6:37-43.

9. Godley, J.L. and L.M. Kitchen. 1986. Interaction of acifluorfen with fluazifop for annual grass control. Weed Sci. 34:936-941.

10. Bollich, P.K., E.P. Dunnigan, L.M. Kitchen, and V. Taylor. 1988. The influence of trifluralin and pendimethaline on nodulation, N_2 (C_2H_2) fixation, and seed yield of field grown soybeans (Glycine max). Weed Sci. 36:15-19.

11. Richard, E.P., Jr., and L.M. Kitchen. 1988. Control of johnsongrass in fallowed sugarcane fields. J. Amer. Soc. Sugar Cane Tech. 8:12-18.

12. Richard, E.P., Jr., J.F. Yoder, and L.M. Kitchen. 1988. Postemergence control of scouringrush (Equisetum hyemale) on sugarcane ditchbanks in south Louisiana. J. Amer. Soc. of Sugar Cane Tech. 8:44-49.

13. Peregoy, R.S., L.M. Kitchen, P.W. Jordan, and J.L. Griffin. 1990. Moisture stress effects on the absorption, translocation and metabolism of haloxyfop in johnsongrass (Sorghum halepense) and large crabgrass (Digitaria sanguinalis). Weed Sci. 38:331-337.

14. Griffin, J.L., B.J. Hook, R.S. Peregoy, and L.M. Kitchen. 1990. Emergency and yield of 2,4-D treated seed cane. J. Am. Soc. Sugarcane Technol. 10:56-60.

15. Griffin, J.L. and L.M. Kitchen. 1990. Evaluation of preemergence and postemergence herbicides on sugarcane tolerance. J.Am. Soc. Sugarcane Technolo. 10:61-65.

BOOKS AND REFEREED BULLETINS

1. Hamilton, W.T., L.M. Kitchen, and C.J. Scifres. 1981. Height replacement of selected woody plants following burning or shredding. Texas Agricultural Experiment Station Bulletin B-1361. 9 pages.

2. Bollich, P.K., E.P. Dunnigan, T.R. Harger, and L.M. Kitchen. 1984. The effect of several herbicides on nodulation, nitrogen fixation, and seed yield of soybeans in Louisiana. Louisiana Agricultural Experiment Station Bulletin No. 762. 15 pages.

3. Vidrine, P.R., J.L. Griffin, R.L. Rogers, L.M. Kitchen, and E.J. Retzinger. 1989. Antagonism associated with Graminicide-broadleaf herbicide tank mixtures. Louisiana Agricultural Experiment Station Bulletin No. 810. 14 pages.

4. Served on the Herbicide Handbook Committee which edited and compiled: The WSSA Herbicide Handbook. Published by the Weed Science Society of America.

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August 16, 2006

Mr. Richard Garcia
Regional Director
Texas Commission on Environmental Quality
Region 13
14250 Judson Road
San Antonio, Texas 78233

RE: Vulcan Materials Quarry, Medina County
Water Pollution Abatement Plan (WPAP)

Dear Mr. Garcia,

On behalf of Medina County Environmental Action Association (MCEAA) I have reviewed the materials submitted to TCEQ for the above referenced project. Banks & Associates is a civil and environmental engineering firm operating in Central Texas since 1998. I am the Principal of Banks & Associates and have over 14 years of experience in environmental and civil engineering. A copy of my resume/professional qualifications is enclosed.

The basis for these comments is the requirement for a Water Pollution Abatement Plan (WPAP), enforceable in its entirety, to be supported by substantial evidence in all respects before it is approved. After reviewing the materials submitted to TCEQ, I have, in my best professional judgment, the following comments and conclusions:

1. Were the temporary and permanent BMP's for the quarry area sized in accordance with RG-348? I was unable to find calculations or construction details for permanent BMPs for the quarry area. It appears that the quarry may ultimately consist of more than 20% impervious cover and would require such.
2. There do not appear to be any Water Quality Volume Calculations for the quarry area.
3. The quarry area is not shown on Exhibit 5- Areas to be Treated as Impervious Cover.
4. There are no temporary or permanent BMPs shown around the concrete washout pit and there are no details for its construction, how is this area protected?

5. In the Temporary Stormwater section it calls for mining through sensitive features, how does the TCEQ handle such a proposal?
6. How is an area "reestablished" by placing stockpile material there?
7. What is under the stockpiles that renders them permeable? Wouldn't the weight of the stockpile material itself after time cause a certain amount of compaction?
8. There are no temporary controls (BMPs) shown for the installation of the bleeder pipes to the creek.
9. Why aren't areas quarried to competent bedrock considered impervious cover?
10. TCEQ 0600- Permanent Stormwater Controls, Attachment B, BMPs for Upgradient Stormwater – there are no details on sizing and placement of structural controls for upgradient stormwater from the quarry area.
11. TCEQ 0600- Permanent Stormwater Controls, Attachment C; Why aren't the areas where the settling ponds are created (in the mined out pits), where the "very fine to clay materials" are placed, considered impervious cover?
12. How are the settling ponds sized and maintained?
13. TCEQ 0600- Permanent Stormwater Controls, Number 8, Attachment D says N/A, why is this not applicable when there are sensitive features identified?
14. TCEQ 0602- Temporary Stormwater, Attachment J- Where will the runoff from the plant area go? Even though the site is relatively flat the runoff will need to be released somewhere and may carry off sediments/material, particularly before the "relative flat, compacted pad" is completed.
15. Why isn't the "flat, compacted pad" treated as impervious cover, at least to some extent?
16. There do not appear to be any structural controls, i.e., silt fence, rock berm, for the railroad construction.
17. Response to comments questions number 27c, it is still unclear how the process will remove 93% of the sediment load (RG-348 requiring removal of 80% of the increased TSS loading).
18. The WPAP states that the floor of the quarry pits "has no impervious cover", how is this so when they are to be sealed with "very fine sediments to clay materials which self-seal any surface they are placed on"? What do the quarry floors consist of that is pervious?
19. In light of number 17 above the quarry area impervious cover may need to be recalculated.
20. According to the USDA Triangle Soils Classification Charts a clay soil should contain at least 60% clay, containing more silt than clay would deem it a silty clay (less than 60% clay and 40% silt).
21. The increased flow and/or velocity of streams (due to the development) does not appear to be addressed quantitatively.
22. What is the water balance between what is required for the plant to operate and what will accumulate in the ponds? The permit states that the accumulated water will be used and recycled in the plant operations, it seems at some point there will be more water accumulated than the plant requires (as time goes on), how will the unnecessary water be disposed of?
23. Has an evaluation of the impacts of the development on surface and groundwater, in an effort to protect aquifer water quantity as well as quality been performed?

24. The WPAP states that the development may actually reduce flow into the adjacent streams, this may impact the aquifer recharge by reducing flow to (potential) downstream recharge features.
25. Are there any long term water level measurements in the on site wells to assess the potentiometric surface under diverse conditions (i.e., seasonal, during drought or after periods of heavy rain)?
26. The parking lot is assessed as being similar to a "commercial" parking lot in terms of possible pollutants/contaminants; it is likely more closely related to "industrial" with heavy machinery, etc.
27. In the response to comments for question number 2 it is stated that a large portion of the "buffer zone" will be left in its natural state, would that be most or greater than 50%? Will the areas disturbed be revegetated or improved with vegetative filter strips?
28. The WPAP states that one of the control measures will be to leave vegetation/roots in the construction area, it would seem that leaving organic and other materials prone to decomposition under a structure would undermine the integrity of the structure.
29. The permanent berms are designed to consist of an inner core of vegetation, burned brush, etc. It would seem that these would not be compactable materials and may compromise the integrity of the berms.
30. What does the material on the outer portion of the permanent berms consist of? How are these to be constructed in terms of structural stability, compaction, etc., to prevent breaching the berms.
31. How are the berms to be maintained? If they are to be revegated with grasses it may be difficult to maintain (i.e., mow the berms) with a side slope of 2:1.
32. In the areas that are quarried the exposed rock/process of exposing the rock will cause an increase in TSS, how is this addressed?
33. Will the soils used as liners for the pond be compacted or self-consolidate? How long would it take for self-consolidation if it is not (mechanically) compacted?
34. Most counties have recently updated their FEMA maps, has Medina County? If so, how (if at all) does this impact the project?
35. There is a proposed alternate settling pond in the floodplain, but no controls are mentioned.
36. Did the borings conducted at the site indicate the presence of any solution cavities (i.e., loss of drill cutting returns) that would impact the project or indicate the presence of sensitive features below the surface where quarrying may be performed?
37. It seems there is no reference to permanent BMPs for the area to be quarried. Have these been addressed elsewhere? The post quarrying runoff will contain higher pollutant loading than the existing conditions.
38. Since the BMPs are concrete lined, as well as the recycling plant, they should be treated as impervious cover (it is difficult to see if they are, but in light of the low impervious cover numbers it does not seem that they are).
39. The runoff coefficients seem low in light of the comments above.

40. The process for quarrying around a fault shows the runoff (step 3) to be directed towards the face of the quarry wall, where is the release for the runoff in such case?
41. Will a mobile truck be used to refuel vehicles in the quarry or at the plant site? What is the relationship, if any, between mobile trucks that will be used for dust control, refueling, and emptying portable restroom facilities? Also, the railcars that will be traveling to the plant area and possibly parked there for a period of time (not enumerated in the WPAP) are potential sources of contamination to the aquifer. The operation of the trucks and railcars are not discussed in the WPAP, but as potential contributors to aquifer infiltration and contamination, their existence and roles should be specifically identified in the plan.
42. It seems that employing 125 people at a permanent location would require more substantial facilities than portable toilets that are to be pumped on a regular basis. Are the other (quarry) facilities operating in this manner?

In addition to the above comments I have reviewed and substantially agree with the comments prepared and submitted by Dr. Lynn Kitchen, Adams Environmental, for MCEAA.

We appreciate the opportunity to submit these comments and look forward to your response. We are confident that TCEQ will be prudent in their review of the WPAP, the responses to the comments and the public's comments on the document, particularly considering the magnitude of the project and the potential impacts to the aquifer.

Sincerely,

Erin K. Banks, P.E.
Principal

STATE OF TEXAS
ERIN K. BANKS
84248
LICENSED
PROFESSIONAL ENGINEER
8/12/06

CC: Dr. Robert Fitzgerald, MCEAA
ATTACHMENT: Qualifications

Banks & Associates

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Erin Banks, Principal has over fourteen years of diverse experience in environmental and civil engineering, and hydrogeologic investigations. This experience includes site development, subdivision planning and platting; drainage studies and stormwater discharge analyses; floodplain development permitting; soil, surface water, and groundwater investigations and remediation at industrial and military sites; Environmental Site Assessments; design/installation of various remediation technologies.

Banks & Associates is a small, woman-owned and operated civil and environmental engineering firm. We are certified as a DBE/WBE in the State of Texas.

Project Summaries

CIVIL ENGINEERING

- Site development plans for residential subdivisions and commercial site development. This includes drainage analysis, design of detention facilities and best management practices (BMP's); compliance with the Texas Pollutant Discharge Elimination System (TPDES or NPDES); roadway and drainage structure design; construction cost estimating; construction bid documents and specifications.
- Preparation of Stormwater Pollution Prevention Plans and for various developments.
- Design of On-Site Sewage Facilities (OSSFs) .
- Water Pollution Abatement Plans for development in the environmentally sensitive Edwards Aquifer Recharge Zone and Contributing Zones.
- Evaluation of Impacts to base flood elevation of streams/rivers as a result of site development.
- 100-year floodplain inundation analyses; establish drainage easements and finished floor elevations.

ENVIRONMENTAL STUDIES

- Stormwater Quality Analysis for Environmental Impact Study (EIS) at San Antonio International Airport.
- Phase I, II, and III Environmental Site Assessments for property development or transfer at various locations across U.S.
- Environmental Assessments for utility line construction.
- Environmental compliance and technical support for remedial actions at various commercial/industrial and military facilities.
- Preparation of Spill Prevention and Pollution Control Plan at Air Force Facility.
- Preparation of statements of work, cost estimates, and project specifications for remediation activities at Department of Defense Facilities.
- Preparation of Work Plans, Quality Assurance/Quality Control Plans, Engineering Evaluation/Cost Analysis Reports, Field Sampling Plans, Monthly Status Reports, and Closure Reports for various Department of Defense and industrial facilities. Prepared Fact Sheets and Proposed Plans for Public Review under the Base Realignment and Closure (BRAC) Program at various military installations.

REMEDIATION

- Construction oversight for removal action for metals-impacted soils.
- Upgrade and retrofit of an existing AS/VE remediation system at a petroleum-impacted site. Designed and upgraded the extraction wellfield, formulated an air sampling protocol and schedule, and analyzed air sampling data. Upgraded and prepared operations and maintenance plan for remediation facilities.
- Prepared required CERCLA documents for hydrocarbon impacted sites.
- Performed analyses to evaluate the appropriate remedial alternatives, with regard to cost, effectiveness, and implementability.
- Oversight for monitoring well construction, groundwater and soil sampling, and free product removal activities.
- Performed a RI, FS, and Remediation by Natural Attenuation (RNA) studies.

HYDROGEOLOGIC INVESTIGATIONS

- Wellfield design for monitoring wells and groundwater production wells.
- Design of public water supply wells, treatment units and distribution systems.
- Design of nitrate treatment system for a public water supply well.
- Water availability studies to assess development impacts on groundwater resources.
- Performed surface water/groundwater interaction study to evaluate the responses of surface and groundwater based upon imposed stresses.
- Performed hydrogeologic studies using numerical models to simulate groundwater conditions.

Personal Data – Erin Banks, P.E.

Education

BCE / 1992 / Civil Engineering/ The Catholic University of America

Registration and Certifications

State of Texas Professional Engineer
State of California Professional Engineer (Civil)
State of Nevada Professional Engineer

Employment History

1998-Present Banks & Associates
1995-1997 OHM Remediation Services
1994-1995 Kleinfelder Associates
1992-1994 Schnabel Engineering Associates

Lectures/Publications

"Procedures for Analyzing Aquifer Test Results and Developing Drawdown Models." Presented at the 2nd Trinity Aquifer Symposium, SWT University. November, 2002.

"Ancient Stream Channels in Washington, D.C. and Their Impact on Contaminant Hydrogeology." Co-authored and presented at the ASCE/AEG Joint Symposium on "Environmental Site Characterization: an Overview", Washington, Baltimore Corridor, May, 1993.